

ABSTRACT OF THE DISCLOSURE

A plasma processing apparatus includes a processing container 53, a mounting table 61 arranged in the processing container 53 to support a wafer W, a sealing plate 55 opposed to the wafer W supported by the mounting table 61, an annular antenna 73 arranged on the sealing plate 55 and consisting of an annular waveguide to introduce a microwave into the processing container 53 through the sealing plate 55, the annular antenna 73 being arranged so that a plane containing an annular waveguide path defined by the annular waveguide is generally parallel with the sealing plate 55, a directional coupler 79 arranged on the periphery of the annular antenna 73, a propagation waveguide 81 connected to the directional coupler 79 and a microwave oscillator 83 connected to the propagation waveguide 81. Accordingly, it is possible to form an uniform microwave in the antenna, so that an uniform plasma can be produced in the processing container.